

# Sleuthing — A Public Health Activity

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THE HEALTH DEPARTMENT is charged by state law with the control of all communicable diseases. In order to do its job, it must know when and where such diseases occur. Therefore, the same law provides that any physician, nurse, teacher or other citizen must report knowledge or suspicion of a case of communicable disease to the health department immediately. In general the job is one of collecting information as to the amount and kind of disease present in the county, and of education so that people know which disease can be controlled by immunizations, when and how often immunizations are needed, how to recognize diseases and how the health department can take measures to avoid them.

Occasionally there are reported to the health department outbreaks of an unusual character. Such a one is the subject of this communication. In dealing with it the efforts of private physicians, schools and the health department were joined to prevent further occurrence of a formidable disease.

On October 14, 1957, a pediatrician in private practice reported to the Marin County Health Department that he had diagnosed three cases of acute glomerulonephritis in one family following streptococcal throat infections. The patients were 7, 9 and 10 years of age and all attended the same elementary school. This strongly suggested a Group A, Type 12, streptococcal infection. In winter the health department laboratory receives increased numbers of requests for examinations of throat cultures, and the number positive for beta hemolytic streptococcus increases during this season. These throat infections each winter usually come and go and cause no further trouble except in instances in which serious complications such as rheumatic heart disease or glomerulonephritis develop. When it is recognized that Group A, Type 12, beta hemolytic streptococcus is lurking in a community, it is time to make a concerted effort to locate the organism and develop plans to eradicate it before the deleterious effects of acute glomerulonephritis can spread further.

The elementary school which the children attended is located in a new subdivision in Marin County where the homes are occupied in the main by young families, mostly business and professional people,

• Because of the unusual coincidence of three cases of acute glomerulonephritis in one family, a private pediatrician was able to alert the Marin County Health Department to the presence of a formidable organism, Group A, Type 12, streptococcus in one community in Marin County. With the cooperation of private physicians, schools, a public health team and the Stanford University Research Laboratory, this outbreak was halted at its very start.

in an unincorporated area somewhat apart from other residential and business centers.

With the cooperation of the principal of the school and technical aid from Dr. Lowell Rantz at Stanford University Medical School, the health department team consisting of nurse, physician and bacteriologist obtained specimens of mucus swabbed from the throats of the classmates of the three young patients as well as from members of the school staff on the day following receipt of the report. To get complete coverage, the public health nurse visited the homes of all children who were absent on that day and took specimens of culture material from their throats. The cultures, 95 of them in all, were examined at the health department laboratory and the ones positive for beta hemolytic streptococcus were forwarded to the Stanford Hospital Research Laboratory for determination of group and type. (Stanford University Hospital Research Laboratory and the United States Public Health Service Laboratory at Chamblee, Georgia, are among the very few laboratories equipped for this diagnostic procedure.)

The report from the Stanford Laboratory showed eight cultures positive for Group A, Type 12, the nephritis-producing streptococcus. This, in addition to the three already known, made 11 positive. Upon receipt of the reports, the family physician and parents of each child who had a positive report were notified and advised to seek preventive treatment at once.

It was decided, in consultation with the school health advisory committee of the Marin County Medical Society, that this was serious enough to warrant extending the examination to the entire elementary school, which was done a week after the report of the first three cases. Of 479 subjects, 25 had cultures positive for Group A, Type 12, streptococcus.

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From a questionnaire sent to the private physician of each child known to have this specific organism, it was determined that eight of the youngsters had a history of sore throat sometime during the week before the culture specimens were taken although they were asymptomatic at the time the material was obtained. In two of these children, signs and symptoms of acute glomerulonephritis developed. Another child, a four-year-old who lived in a neighborhood where infected children played, had streptococcal sore throat and acute glomerulonephritis during the last week in November—some six weeks after the reporting of the first three cases. Of 91 throat cultures taken from family contacts of patients and carriers, none was positive for Group A, Type 12, streptococcus.

The important fact to note is that, of 25 children (in addition to the original three patients) with throat cultures positive for the nephritis-producing streptococcus, only three developed the disease.

The 25 children from whom the Group A, Type 12, organism was cultured were evenly scattered throughout the first six grades of the elementary school. Although the organism is known to spread rapidly within a household, in this survey there was only one such instance apparent.

The prompt recognition of this disease in the community enabled the physicians, school officials and the health department to take the emergency measures necessary to identify the infected persons and to institute preventive treatment which successfully stopped further spread in the community.

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